# User manual
# Keofitt Micro Port

keofitt®
WORLD LEADERS IN STERILE SAMPLING™

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## Introduction

**Manufacturer:** Keofitt a/s,
Hans Egedes Vej 19
5210 Odense NV
Denmark

**Micro Port, Type:** **900017** Micro Port Type P with 12x1 pipe connection.
**900056** Micro Port Type T for tank connection.
**900057** Micro Port Type P for pipe connection.

### Presentation:

The Micro Ports are designed for samples taken with Hypodermic needle or syringe with minimum risk of contamination. This is acquired by thick EPDM membrane and overall design with the purpose of eliminating all dead spaces and crevasses where bacteria could cultivate.

The Keofitt Micro port is hygienic, easy to use and maintain, way of getting samples via hypodermic needle or syringe in a safe way.

The Micro Port is available in 3 versions. First (900056) has a flat seat for tank welding. There are 2 versions for Pipe welding one (900017) has an integrated 12x1 pipe connection for easy installation in a system. The second (900057) is for welding on pipes of larger dimensions and has a connection profile that accommodates the thinner pipe-wall thus providing maximum welding quality.

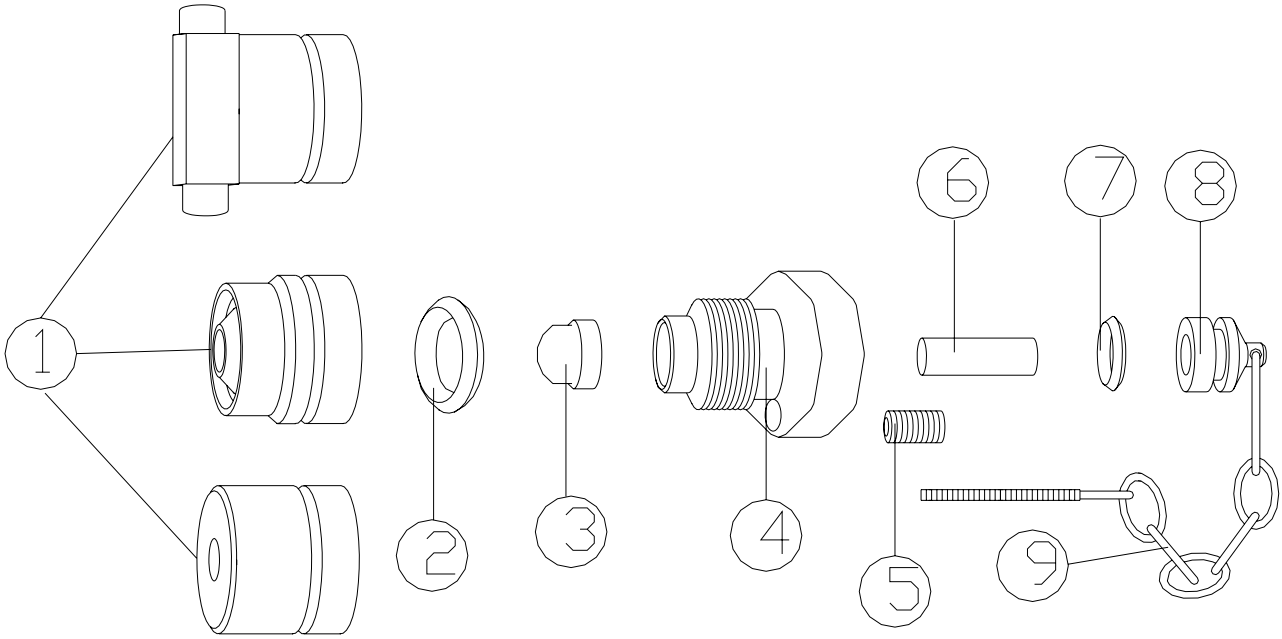
***Warning!*** The system is designed for use in working conditions of 0-6 bar (g). Please note that the sealing capacity is reduced with increased frequency of piercing.

# Type 900017, 900056 and 900057.

900017

900056

900057




| Part list | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Nr.** | **Part Nr.** | **Part name** | **Qty** | **Nr.** | **Part Nr.** | **Part name** | **Qty** |
| 1 | 9001XX* | Micro port Base | 1 | 6 | 990055 | Wick for micro port | 1 |
| 2 | 900824 | O-Ring 14 x 4 | 1 | 7 | 900822 | O-Ring 9,3 x 2,4 | 1 |
| 3 | 900049 | Membrane EPDM for micro port | 1 | 8 | 900441 | Plug m.p. | 1 |
| 4 | 900155 | Hex nut m.p. | 1 | 9 | 900077 | St. st. Chain for micro port | 1 |
| 5 | 900840 | Pivot screw micro port | 1 | *were XX stands for the last 2 Letters in the complete port ordering no. | | | |

| | |
|---|---|
| Where to use 900017: | Mounted by welding on pipes DN10 |
| Where to use 900056: | Mounted by welding on any tank |
| Where to use 900057: | Mounted by welding on any pipe min Ø25 |
| Material: | 316L (1,4404) |
| Membrane: | EPDM |
| Material certificate: | 3.1.B |
| Optional dimension: | NW25 |
| Inner surface: | Ra 0,8 my |
| How to use : | Manually operated. |
| Pressure range: | 0-6 bar(g) |
| Temp. Range: | 1-110C |

Electro polish outside standard

## Mounting instructions

**Location:** It does not matter if the Micro Port is installed vertical or horizontal, it only matters that the Micro Port is in contact with the product and has good access for sampling.

**Before welding: Remember to disassemble the micro port base and hex nut.**
The micro port and the hex nut must be separated during welding. Rubber plugs, chain and membrane must be removed from the base, as heat from the welding process will otherwise damage them.

### Welding instructions: See sketch on next page.

Micro Port for welding is available in two types: T (tank) and P (pipe).

1. For type T (tank) it is necessary to drill a hole ø28 mm into the tank wall. Then fit the Micro Port into this hole, flush with the inside of the tank. Welding should be carried out as a penetration welding.
   Material thickness less than 4 mm: Weld from inside.
   Material thickness greater than 4 mm: Weld from both in- and outside.

   Since type T has a solid end piece, the valve will not be damaged by penetration welding. However, the use of purge gas in either the form of Argon or Formier gas is recommended in order to give the best result.

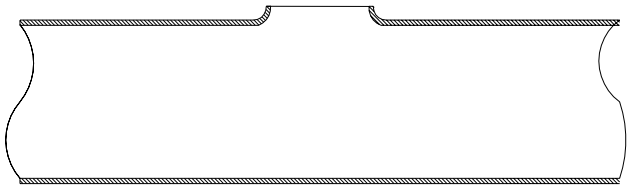
**Important!** When grinding/polishing the internal weld, the Micro Port seat area must not be damaged.

2. For type P (pipe) penetration welding must be carried out from outside.

   Micro port is machined with a recess-like shoulder on the outside of the end piece which gives approximately the same material thickness (1.5mm material thickness) as in the pipe wall. This machined shoulder can be modified according to the customer's wishes.

The welding result will be best if the following method is used:

A collar is made on the pipe section so that the Micro Port has a flat contact face. This flaring must look like a T-piece, as shown in the example below.



- The pipe section and the base are sealed with sponge rubber or similar.
- Purge gas such as Argon or Formier gas is fed through the valve body into the pipe section and the system is now filled with 6 times the estimated volume of the pipe section. All $O_2$ is thus expelled from the system and welding can commence.
- Welding can take place with the purge gas continually flowing in the system.
- The gas remains in the system until the item is hand warm, after which the set-up can be dismantled.

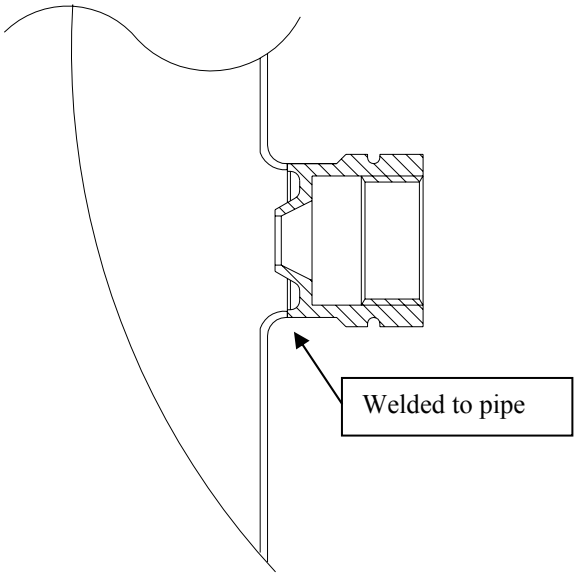
## Guideline welding values:

| | |
|---|---|
| Micro Port welded onto a 2 mm 3” stainless steel: | 40-50 Amps. |
| Micro Port welded onto a 1.25 mm 2” stainless steel: | approx. 30 Amp. |

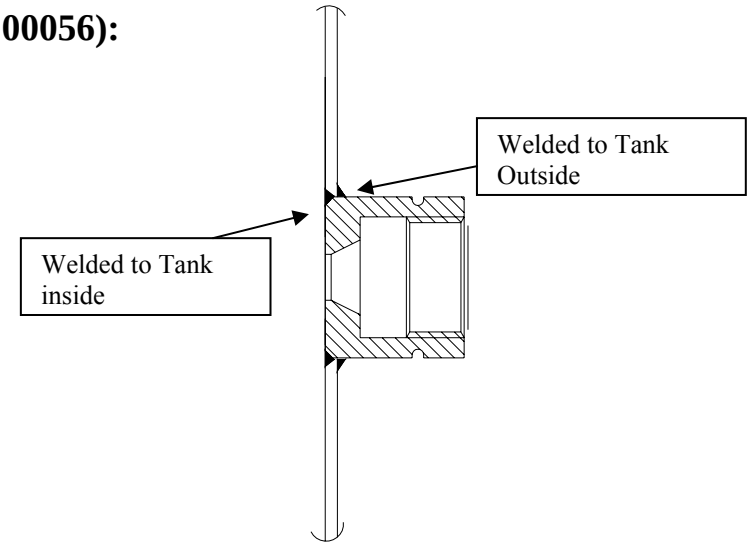
It should be noted that Keofitt can supply all P type Micro Port welded onto a pipe section according to customer specifications. Flaring is thus avoided and only an orbital (girth) weld is required.

**Block diagram for welding to pipe and tank**

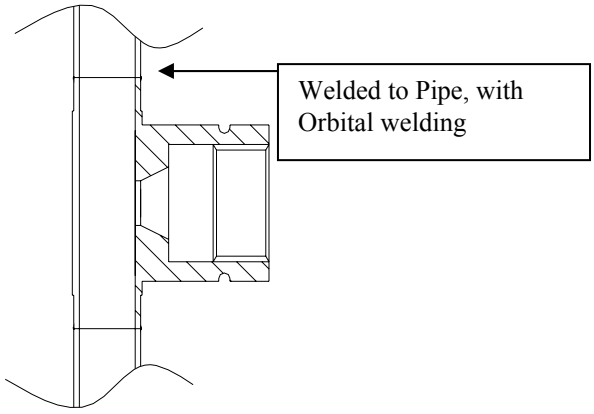
## Keofitt Micro Port type P, pipe (900057).




## Keofitt Micro Port T, tank (900056):




## Keofitt Micro Port type P, pipe (900017).



**Everyday use of the Micro Port:**

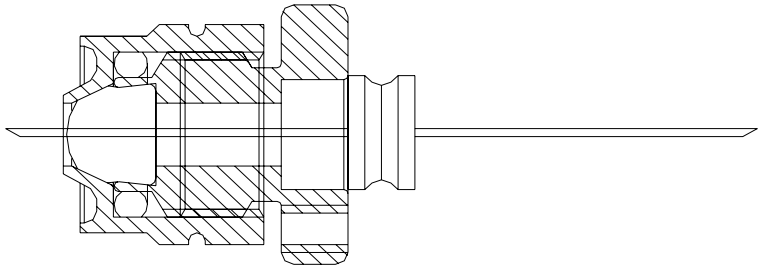
Use wick for sterilisation Keofitt item number 900055.

## Sterilisation:

1. Remove cap.
2. Soak cotton wick in disinfectant / alcohol.
3. Put the soaked wick in the cap.
4. Rub the inside of the Micro Port with the soaked wick.
5. Close the cap with wick in place.

## Sampling:

1. Remove the cap from the Micro Port.
2. Sterilize the Micro Port.
3. Pierce the membrane with Hypodermic needle / syringe.
4. Extract Sample.
5. Sterilize the Micro Port and put cap in place with wick.

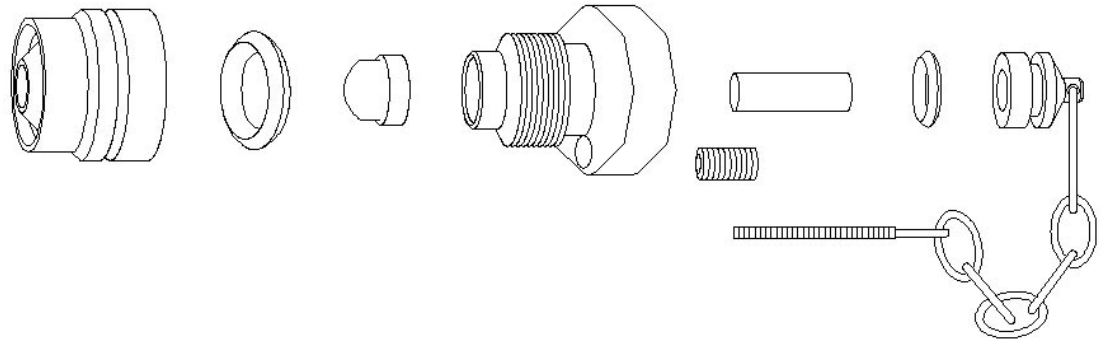


**Warning!** With increased number of samples taken with each membrane the danger of cross contamination increases and the membranes ability to sustain pressure decreases.

## Maintenance:

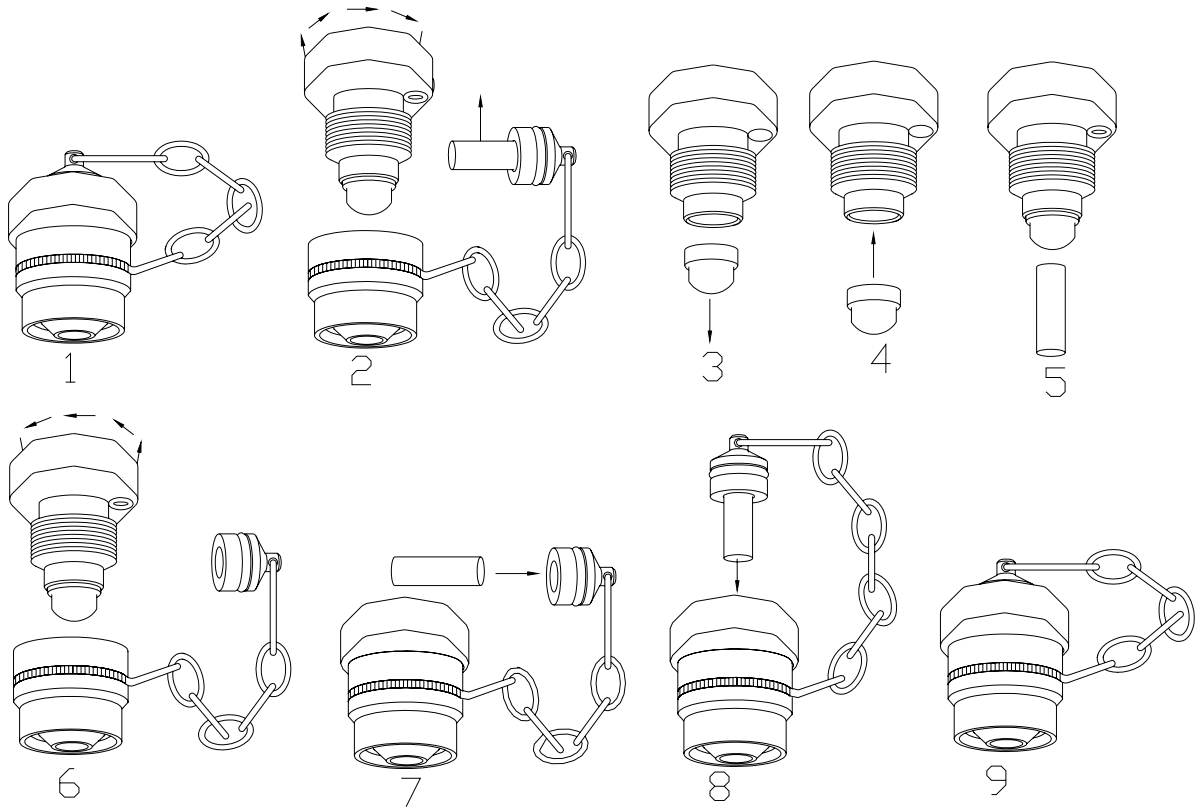
The membrane along with the cotton wick should be replaced with every production batch.

**Disassembly and assembly:**



## Order of operation to replace membrane

1. Remove cap and cotton wick.
2. Turn hex nut counter clockwise and pull out of the base.
3. Pull out old membrane.
4. Put new membrane in place and press until it is firmly in place.
5. Take sanitary precautions, for example run disinfectant soaked cotton wick over the membrane or autoclave it.
6. Put Hex nut in base and turn clockwise until the Micro port is completely assembled.
7. Put new disinfectant soaked cotton wick in cap.
8. Sterilize inside of Micro Port with the cotton wick.
9. Put cap in place along with the cotton wick.



## Accessories:

| Item | Type | Item-no |
|---|---|---|
| Hypodermic needle 40mm piercing | Short | 900054 |
| Cotton wick for sterilization | Normal | 900055 |
| Membrane | EPDM | 900049 |

900049 (10,5mm)
EPDM



900055 Cotton wick
for sterilization

900054 Hypodermic
needle 40mm piercing

## Alternative:

Keofitt Multi Micro Port 49™ (item no. 840 000) is designed to take many samples in every production period. It eliminates the danger of cross contamination between samples via the membrane. It also eliminates the risk of introducing old product from previous sample into the process. Since fewer samples are taken from each membrane the pressure resistance also remains more stable and higher.